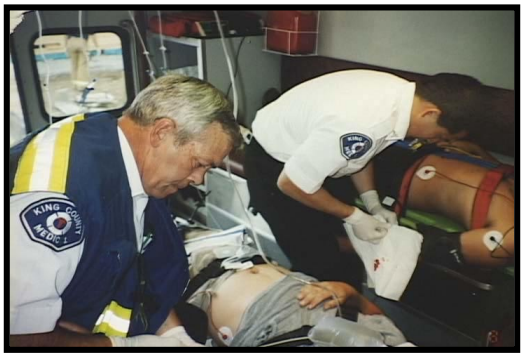
Part II: Status of EMS Division Programs and Activities

Introduction

The Emergency Medical Services (EMS) Division of Public Health - Seattle & King County is dedicated to increasing survival and reducing disability from out-of-hospital emergencies in the county by providing the highest quality of patient care in a pre-hospital setting. All EMS Division programs are designed to enhance this effort and are developed through strong partnerships with other agencies and innovative leadership in the emergency medical field. This section summarizes the major EMS programs and activities involving the EMS Division.

A. King County Medic One Program

The EMS Division administers the King County Medic One (KCM1) paramedic program, one of six Advanced Life Support (ALS) programs operating in the county. KCM1 employs over 60 paramedics and support staff and provides emergency medical response to patients in the south King County region. The KCM1 service area covers 500 square miles with a population of over 750,000 people. In the year 2001, KCM1 responded to over 12,000 dispatch-selected paramedic alarms in their primary service area in addition to responding to mutual aid in neighboring jurisdictions.



King County Medic One

Each day of the year, King County Medic One operates six full time medic units and one 12-hour unit. Paramedics work 24-hour shifts and utilize five area hospitals for medical direction. KCM1 has 20 vehicles in their fleet and puts approximately 250,000 fleet miles on the medic units per year.

Medic units are housed at eight satellite sites that include local fire department stations, KCM1 facilities, and a central office in the industrial area of Kent. The units are placed strategically throughout the service area to minimize response times and maximize cost-efficiencies. Additional paramedic resources for south King County are being considered for implementation in 2004 and 2006.

All King County Medic One paramedics are trained in the Paramedic Training Program at the University of Washington School of Medicine, based at Harborview Medical Center (HMC). Students develop their skills under the tutelage of experienced physicians, nurses, and Seattle Fire Department paramedics during the rigorous ten-month training course. Paramedics obtain monthly continuing medical education training at HMC and other educational venues. These activities are required for their biennial re-certification.

Two positions are shared and co-funded by the EMS Division and KCM1, and directly support regional EMS training. One is the manager of the BLS Training Division and the other is an Education Coordinator Officer (ECO) assignment for the south King County region. Recent innovations include the institution of a Grand Rounds Training (GRT) program that allows on-duty KCM1 medic units to train during their shifts at a central station. This model utilizes a team from the KCM1 program, under the tutelage of the Medical Director, to teach paramedics new skills as well as provide training on high-risk/low-frequency skills and procedures.

Additional ALS services are provided to the citizens of King County by staffing medic units for special events (World Trade Organization conference) and other high-volume public activities. A paramedic "Bike Team" is in development for events where motor vehicle access is limited. KCM1 personnel also participate in regional BLS training, dispatch quality review and training, equipment purchasing and vehicle replacement initiatives.

King County Medic One remains one of the premier paramedic providers in the nation. Its high cardiac-arrest survival rate and superior customer-service and customer satisfaction levels help maintain its reputation and define its performance standards. The personnel who provide this "core service" are dedicated to public service at the highest level.

B. 1998-2003 Strategic Initiatives:

As previously mentioned, all twelve strategic initiatives identified in the 1998-2003 EMS Strategic Plan have been developed and implemented. The original intent of the initiatives was to 'improve the County's EMS system and to assure it can deliver high quality services within available funds.' The initiatives were designed to target three major areas:

- Diminishing the rate of growth in demand for emergency medical services to 3% growth per year.
- Using existing resources more efficiently.
- Enhancing existing programs and adding new programs to meet emerging community needs.

A majority of the strategic initiatives have already been integrated into current protocols as part of the EMS Division standard of practice. A brief description of each initiative is provided below, including the original strategic initiative goal as outlined in the 1998-2003 EMS Strategic Plan and the current status of the initiative. A summary table is also available at the end of this section on page 26.

Strategic Initiative #1: Develop and Implement an EMS Advisory Committee

Goal: The purpose of the EMS Advisory Committee is to assist the EMS Division in implementing the 1998-2003 EMS Strategic Plan.

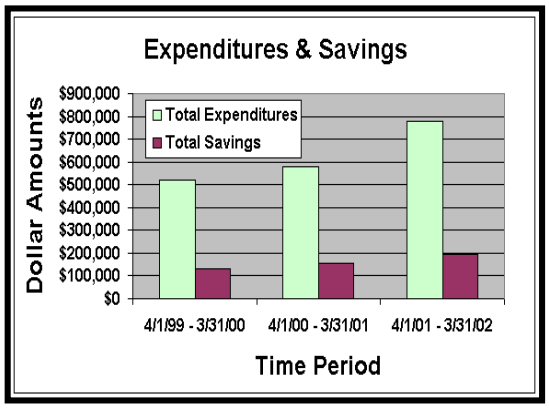
The **EMS Advisory Committee** was formed in December 1997, and has met on a quarterly basis to discuss the progress of the strategic plan, review the development and implementation of the strategic initiatives, and act as a judicious discussion forum for important EMS issues. The committee played an integral role in supporting and reviewing the development of programs such as the Telephone Referral Project, Appropriate Destination and Patient Treatment Project, and Regional Data Collection Project.

The EMS Advisory Committee also plays a supporting role in the direction of Emergency Medical Services in King County by making recommendations to various political bodies concerning key EMS issues, such as monitoring the restructure of the Evergreen Medic One program and addressing the use of EMT-P units. A copy of the current membership on the committee and their respective representation can be found in Appendix E on page 63.

Strategic Initiative #2: Establish and Maintain a Regional Purchasing Program

Goal: A regional joint purchasing program for medical and office supplies will be developed, allowing EMS providers access to better purchasing discounts than might be available to individual agencies.

The **EMS Regional Purchasing Program** is a voluntary countywide program designed to reduce equipment and supply expenses by maximizing the joint purchasing power of EMS providers. The program is managed by a committee that meets on a quarterly basis to address operational issues, review EMS products, and evaluate the progress of the program. Since its successful completion as a one-year pilot project in 1998, the program has been operating under a contractual basis with a vendor. In March 2002, after a competitive bid process, Life-Assist, Inc., was once again awarded the contract.



The Regional Purchasing Committee looks at three indicators when evaluating the program: agency participation, total cost savings, and agency satisfaction. During the last contractual period (April 1, 2001 through March 31, 2002), total expenditures increased by $202,356 and savings have totaled over $195,785. This is a 35% increase in financial participation from the previous year.

A survey conducted by the EMS Division in Spring 2001 found that of the responding agencies, 65% claimed to be participating in the program. Of those, 80% claimed they were "very active" in the program, 95% said that the program was efficient and easy to use, and 100% were satisfied with the program.

The EMS Division and the Regional Purchasing Committee are currently looking at designing a similar program that would offer paramedic agencies in King County cost-savings options for purchasing medications.

Strategic Initiative #3: Develop a New Vehicle Replacement Program

Goal: The feasibility of a new vehicle replacement, salvage, and retrofit program will be studied to extend the useful life of paramedic vehicles to as much as five years.

Paramedic vehicles are an integral and important part of emergency medical care delivery. They must be able to carry the paramedic crew and patient safely and comfortably at high speeds, and be replaced at regular and frequent intervals.

Review of the medic unit replacement policies and development of a new vehicle replacement program was completed in December 2000. Two basic approaches for vehicle replacement were suggested for review. In the first scenario, although the initial capital outlay was higher, large heavy vehicles were simply thought to last longer. However, the unit turned out to have a rough ride, and other operational features of these units made them unsuitable and uncomfortable for patients. It was also not clear that there would be any measurable financial advantages from these units and it was recommended that these units not be employed in paramedic service.

The second approach, one that has been used successfully by Seattle Medic One, is to rechassis the unit, attaching the patient compartment to the new chassis, rather than completely replacing the paramedic unit. The cost of the initial rechassis is estimated at 60%-70% of the cost of purchasing a new unit. If the patient compartment remains in good condition, it may be possible to rechassis more than once.

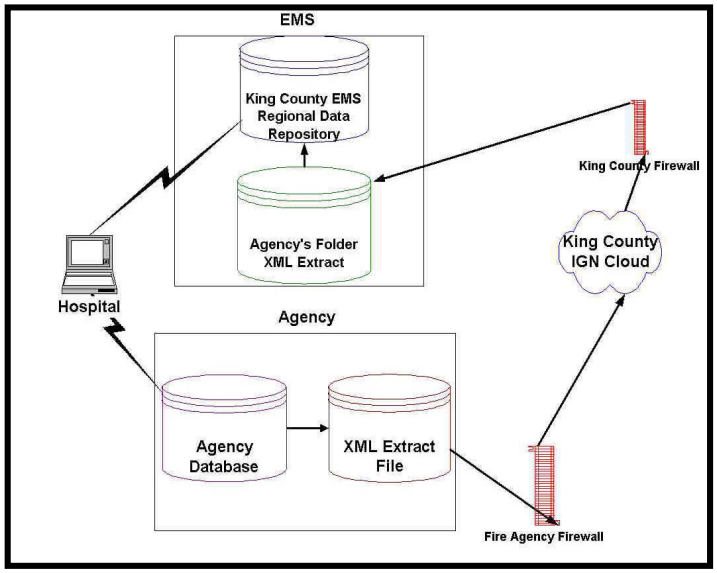
Strategic Initiative #4: Enhance ALS, BLS, Regional Services and Financial Monitoring Systems

Goal: The EMS Division will enhance its monitoring database, working with BLS and ALS providers to assure that data are collected and reported in a timely manner, and develop measures for monitoring contract performance, utilization levels, funding requirements, and cost-savings.

The **Regional Data Collection (RDC) Project** is an ongoing countywide effort to implement a system that allows electronic collection and distribution of EMS data. The goal of the project is to allow EMS providers the ability to complete an electronic version of the Medical Incident Report Form (MIRF) and electronically transfer that report directly to the regional EMS database. The collection and consolidation of data via electronic means will improve the accuracy and completeness of the data, provide access to the aggregate data by individual service providers, allow for more intensive analysis of the data and facilitate the assembly of system reports.

The RDC project is divided into three major phases: Phase I included the development and implementation of a system prototype in collaboration with pilot EMS agencies in the County.

Once the system design had been successfully tested, Phase II invited the remaining EMS agencies to participate. Phase III focused on connectivity with hospitals and other health care agencies. Development of the Regional Data Collection Project began in August 1998 with six pilot agencies and Phase I was successfully completed in December 2001. Phase II was initiated in January 2002.



There are currently ten agencies collecting data electronically, including Auburn Fire Department, Bellevue Fire Department, Federal Way Fire Department, Kent Fire & Life Safety, Kirkland Fire Department, Port of Seattle, Redmond Fire Department, SeaTac Fire Department, Shoreline Fire Department, and Fire District #40. These departments represent 50.0% of the forms generate in a year.

An additional five agencies are expected to begin collecting electronic data collection in the next six months, increasing electronic reporting by agencies to 62.3%. The EMS Division is currently working with local area hospitals to begin piloting the exchange of pertinent electronic pre-hospital and hospital data.

In all cases of data collection and transfer, the strictest policy of patient confidentiality is maintained. This includes utilization of secured methods for data transfer, and limited access to confidential information. In anticipation of the implementation of Health Insurance Portability and Accountability Act (HIPAA) regulations, the EMS Division is evaluating any additional areas for improvement.

As a subset of the Regional Data Collection Project, the **Alternate Input Device Pilot Project** is designed to test hardware options for EMS data collection in the field and develop the specifications for a software product that allows the Medical Incident Report Form narrative to be completely captured in electronic form using current handwriting recognition capabilities. Development of this new pilot project began in August 2001. During a period of six months, the implementation phase will determine the usability and feasibility of the both the software prototype and the selected hardware devices, in addition to evaluating the specifications for a longterm software solution.

Development of an efficient and reliable data collection system is directly related to effectively monitoring and evaluating an EMS system. In 1999, the first EMS Annual Report to the King County Council was published. The report included an evaluation of the status of the EMS system in general, provided details on the progress of the strategic initiatives as outlined in the

1998-2003 EMS Strategic Plan, presented a revised set of EMS performance measures reflecting EMS utilization and trends, and offered a summary of the financial plan for the upcoming year.

Strategic Initiative #5: Develop EMS Policy Issues with other Health Care Entities

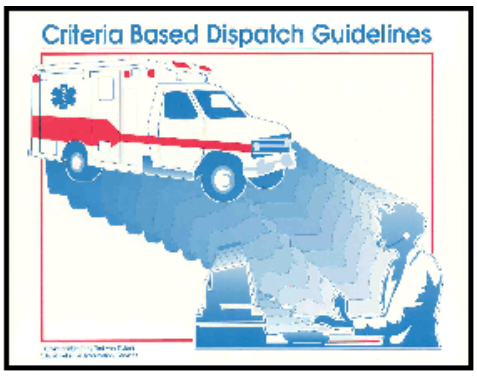
Goal: The EMS Division will continue discussions with local health plans and providers on methods to educate consumers on cost-effective use of the EMS system.

The EMS Division has worked very closely with local area health care plans and providers to address consumer utilization of the EMS system. These collaborative efforts include development and implementation of the Telephone Referral Program, Alternate Transport and Patient Treatment Program and Patient Education Programs.

Strategic Initiative #6: Revise ALS Response and Dispatch Triage Criteria

Goal: The EMS Division will study the feasibility of refining the ALS triage guidelines to increase the focus of ALS care on patients who will most benefit from ALS services.

One of the primary goals of this initiative was to increase the efficiency of the EMS system by reducing the rate of growth of ALS calls and decreasing unnecessary ALS responses. Between 1999 and 2001 the EMS Division implemented comprehensive revisions to the Criteria Based Dispatch (CBD) Guidelines, provided training in the revisions to all dispatchers and fire department personnel, and started an Emergency Medical Dispatch Quality Improvement process.



During 2001, data were collected to conduct a comparative analysis of the impact of the 2000 CBD Guidelines revisions by reviewing annual data from 1999 and 2001. A final analysis of this data has not been completed, however preliminary results are extremely encouraging. The total number of EMS responses increased by 4,453 from 1999 to 2001 in the areas served by Eastside Communications Center (ECC) and Valley Communications Center (VCC). However, the percentage of responses initially dispatched as ALS responses decreased from 88% to 74% at Eastside Communications Center and from 77% to 48% at Valley Communications Center.

These two dispatch centers processed a combined total of 96,461 EMS calls in 2001. Results from these two service areas also showed a corresponding increase in the percentage of requests by BLS personnel to have an ALS Unit dispatched to the medical emergency at one of these dispatch centers. BLS requests for ALS units increased at Valley Communications from 19% in 1999 to 29% in 2001. BLS requests for ALS units at Eastside Communications remained constant at 8% during the 'before' and 'after' implementation periods. These reductions in ALS responses may indicate that the revisions to the ALS triage criteria have been beneficial in reducing the volume of unnecessary ALS responses in King County. A final analysis of these

data will be conducted in the 3rd quarter of 2002, including a case review of medical appropriateness of the level of care dispatched.

Strategic Initiative #7: Review and Enhance Transport Destination Policies

Goal: The EMS Division will establish a broader array of transport destinations to shorten time and distance factors.

The 1998-2003 EMS Strategic Plan identified the development of an array of transport destinations as a strategy for utilizing existing EMS resources more efficiently. In April 1998, Woodinville Fire & Life Safety initiated the **Alternate Transport Project** in collaboration with the EMS Division and the Evergreen Urgent Care Clinic. The goal of the project was to offer patients calling 911 for emergency medical services an opportunity to receive medical treatment at a local clinic when appropriate to their required level of care. Based upon assessment codes used by EMTs in the field, the Medical Program Director developed the selection criteria for patients eligible for transport to the urgent care clinic. Emergency medical personnel established eligibility following an evaluation at the scene. Selected patients who met the specific criteria (assessments of pre-specified non-urgent trauma or medical codes) were then given the option to receive medical treatment at a local participating clinic. Following two years of intensive review and oversight, the pilot project was completed in May 2000.

Kent Fire Department

The **Appropriate Destination and Patient Treatment (ADAPT) Project** followed on the heels of the Alternate Transport Project, benefiting from the lessons learned with specific enhancements to the project protocols. Operating in the Kent Fire and Life Safety and Maple Valley Fire & Life Safety service areas, a six-month pilot project was completed, referring eligible patients to local clinics from August 2000 through January 2001.

In evaluating the ADAPT project, there were three areas of particular interest. They included the medical outcome when referred to a local area clinic, patient satisfaction with treatment received at the clinic, and development of an acceptable process for the submission of insurance claims. The ADAPT project reported no adverse outcomes when patients were referred to an urgent care clinic for treatment. Of those patients contacted for follow-up, all patients seen at an ADAPT clinic were fully satisfied with their treatment. Most patients contacted stated that they were seen in under two hours and all were seen in under four hours. Finally, the majority of the patient insurance organizations reimbursed the clinics at a reasonable and expected rate. This does not imply that guarantees are in place for payment, but that insurance companies do not universally reject claims for referrals to participating local clinics.

The following related paper was published in the Journal of PreHospital Emergency Care: Schaefer RA, Rea TD, Plorde M, Peiguss K, Goldberg P, Murray JA, 'An emergency medical

services program of alternate destination of patient care.' *Prehosp Emerg Care* 2002 Jul-Sep; 6(3): 309-14.

Strategic Initiative #8: Public Education on the Use of 911

Goal: The EMS Division will coordinate with the public health department and other providers on injury and illness prevention and intervention programs.

Injury is an under-recognized major health problem facing the nation today. The study of injury represents an unparalleled opportunity to reduce morbidity and mortality and to realize significant savings in both financial and human terms, all at a relatively modest investment (National Academy of Sciences, Injury Control, 1988).

Injury is predominately a problem for the young and is the leading cause of death for those under 45 years of age. In the elderly, falls account for many hospitalizations, and often begin the downhill slide, ending in death. The following program descriptions provide some insight into the various programs operating in King County and supported by the EMS Division.

Over the past five years, the **Fall Factors Prevention Program** has been funded by the Central Region EMS and Trauma Care Council the King County Fire & Life Safety Association (KCFLSA). This program targets low income people 65 years and older who have fallen at least once during the past year or people at high risk for falling.

The Falls Factor Program aims to prevent falls among older persons at an elevated risk of falling by providing home safety assessments and risk reduction device installation as well as education regarding methods to reduce the chance of falls. EMS personnel coordinate client referrals that are generated by a variety of community agencies, including the Seattle Mayor's Office on Aging, the Department of Social and Health Services (DSHS), Senior Services of Seattle/King County, and several hospitals.

These referrals are then sent to a local fire department where specifically trained personnel, known as Public Fire Educators, conduct an assessment of the home with respect to the hazards associated with falling. City fire departments in Bellevue, Bothell, Federal Way, Kent, Kirkland, Redmond, Renton, Shoreline, and Woodinville as well as Eastside Fire & Rescue and King County Fire District #40 are actively involved in the program. Based upon the outcome of the assessment, the Public Fire Educators install the appropriate 'risk reduction devices' that may help reduce the risk of falling. These devices include tub grab bars, toilet grab bars, shower seats, rug slips, bath mats, night lights, tread tape, smoke alarms, and carpet tape.

Approximately 175 home evaluations were completed during this annual reporting period. For those who participated in the program and had a prior fall, the risk of recurrent fall was 24%. Other studies in similar populations have reported a 50-67% risk of falls (Tinetti et al, Hornbrook

et al). If these findings are compared to an expected rate, the Falls Factor Program appears to have reduced the relative risk of falls by approximately 50%. Such a reduction would have meaningful personal and public health benefits for the community.

Eastside Fire & Life Safety

The **Think Again Program** is a unique effort by local firefighters and paramedics in King County to reach teen drivers with real-life stories about the tragedies EMS personnel encounter when people don't wear seatbelts or use alcohol or drugs and get behind the wheel. This is part of a special effort by local fire departments, in conjunction with the EMS Division, to emphasize safe driving for teens.

In the presentations at the schools, firefighters use graphic car crash photos, personal stories, and audience participation scenarios to depict the consequences of reckless driving decisions. Students are given information about alcohol poisoning, the perils of raves and underage alcohol parties, and the effects on families and friends when teens are hurt, permanently disabled, or killed in automobile crashes.

The EMS Division, Washington State Traffic Commission, and the King County Fire & Life Safety Association (KCFLSA) are sponsors of the Think Again Program. KCFLSA is a non-profit organization of fire and life safety educators from fire departments and other agencies throughout the county. A variety of funds were obtained during 2001 to support the Think Again Program beyond the baseline funding to run the program. The Washington State Traffic Safety Commission granted $7,500 for KCFLSA to provide two statewide Think Again train-the-trainer workshops. The EMS Division also provided $5,000 for classroom presentations in King County.

To further promotional efforts of the program in King County, a grant of $5,000 was secured from the Washington State Department of Health to produce a promotional video for use by member departments. Additionally, the Washington State Department of Health awarded $8,700 to fund an analysis of the Think Again program through an observational seat belt survey at schools where the program was presented. Part of this funding also provided a give-away item of key chains with a Think Again message for students who attend the program.

The program is available countywide, and EMS agencies currently providing the Think Again program to the schools in their jurisdictions include: Auburn, Bellevue, Bothell, Fire District #40, Federal Way, Eastside, Kent, Kirkland, Northshore, Redmond, Seattle, Shoreline, and Woodinville. The Think Again program reached approximately 8,587 high school students from October 2001 to September 2002.

The efforts of both the KCFLSA Think Again Steering Committee and member fire departments were recognized when the Think Again program was awarded the *Washington Traffic Safety*

Commission: Traffic Safety Superstar Award in Educational Outreach at the annual Washington Traffic Safety Commission DUI Conference in December 2001.

The EMS Division assists in a **Child Passenger Safety Program** by providing child car seat inspections throughout King County in conjunction with local fire department personnel and National Highway Transportation Safety Administration (NHTSA) certified child car seat technicians. Certified NHTSA technicians complete and pass a 32-hour Standardized Child Passenger Safety Training Program sponsored by NHTSA and the American Automobile Association (AAA). The EMS Division sponsored two car seat check-up events last year, one in Woodinville during 'EMS Week' celebrations, and the second at the Boeing Flight Museum in support of 'Fire Department Day for Kids' festivities. A total of 76 car seats were checked at these two events. Eighty-five percent of the inspected car seats were found to have been incorrectly installed, indicating the substantial need for the Child Passenger Safety Program to continue and the potential impact on reducing injuries to children in King County.

The EMS Division initiated the **Bicycle Helmet Program**, a low cost program that provides affordable bicycle helmets to the citizens of King County. A perpetual bicycle helmet fund allows the program to continue and is managed by the King County Fire & Life Safety Association (KCFLSA). Helmets are available for a $6 donation. All funds are donated to KCFLSA for the sole purpose of keeping the perpetual bicycle helmet fund going.

Eastside Fire & Life Safety

The Bicycle Helmet Program is staffed by EMS personnel who are thoroughly trained on the technique for properly fitting helmets, including watching the 'Safe Kids Helmet' video and 'hands-on' instruction. During the period from October 2001 through June 2002, 564 helmets were properly fitted and distributed during various community events, including the 'Fire Department Day for Kids' celebration at Boeing Flight Museum and local fire department open houses.

Strategic Initiative #9: Establish Dispatch Referral Network for Appropriate Calls

Goal: The EMS Division will revise the dispatch guidelines to screen non-urgent calls for referral to social and health care services when medically appropriate.

One of the Strategic Initiatives identified in the 1998-2003 EMS Strategic Plan directed the EMS Division to explore alternative methods for handling non-urgent calls to 911. In 1997, the EMS Division implemented the **Telephone Referral Project (TRP)** as a pilot project at Eastside Communications Center, serving east and north King County. The project allowed emergency dispatchers to transfer non-urgent callers to a consulting nurse line. Results from the pilot at Eastside Communications Center demonstrated that the transfer of specific 911 calls to a telephone nurse line was safe and effective with a high rate of patient satisfaction.

Evergreen Healthline

The project was expanded to Valley Communications Center (VCC) in the year 2000. The final phase of a 15-month evaluation was completed in March 2002. Results from Phase III of the pilot project at VCC showed 80 calls successfully transferred to the consulting nurse line during the pilot period. The nurse provided the following types of care: Home care (31%), Referral to primary care physician (18%), Referral back to 911 (16%), Referral to an urgent care clinic (14%), Referral to a community resource (6%), Emergency department referral when no urgent care was available (6%), No nurse triage was provided (4%) and Information only (4%). Ninety-eight percent of the callers contacted during a telephone follow-up (within 48 hours) reported they were feeling better than at the time of their call to 911. An overwhelming majority of the callers were satisfied with the outcome of their medical condition (98%).

As a final review of the Telephone Referral Project, the EMS Division prepared a combined report from both large communications centers covering a 6-month period during 2002. During this time period, a total of 375 calls were successfully transferred from the two centers to the EMS Telephone Referral Line. As a result of this intensive four-year analysis of this project, the EMS Division concluded the project has proven to be safe for patients with a high level of patient satisfaction and an efficient use of EMS resources. In June 2002, the pilot project was incorporated into the EMS Division Emergency Medical Dispatch Program.

The following related article was published in the Pre-Hospital Emergency Care: Smith WR, Culley L, Plorde M, Murray JA, Hearne T, Goldberg P, Eisenberg M. 'Emergency medical services telephone referral program: an alternative approach to non-urgent 911 calls.' *Prehosp Emerg Care*. 2001 Apr-Jun; 5(2): 174-80.

Strategic Initiative #10: Standardize BLS Run Review Program and Performance Measures

Goal: The EMS Division will standardize and expand the method for monitoring and evaluating BLS agencies.

The EMS Division completed a review of the **BLS (Basic Life Support) Run Review Program** in June 1999. The goal of the BLS Run Review Pilot Project was to develop a consistent set of guidelines for review of BLS Medical Incident Report Forms (MIRFs), providing a blueprint for agencies wishing to start a review process, or providing a structure for those who already had an established but inconsistent or undefined process.

Following the six-month BLS run review pilot program, a number of useful themes were identified. Most agencies had a BLS Run Review Program already in place, and the run review

process allowed reviewers to link their findings to training programs in order to address general areas of concern. Based on the experiences with the pilot, the new BLS Run Review Guidelines were distributed to agencies.

A revised set of BLS agency performance measures are regularly evaluated with respect to generalized systems review and implementation of the Strategic Initiatives as part of the annual report to the King County Council.

Strategic Initiative #11: Enhance and Expand Continuous Quality Improvement Program

Goal: The EMS Division will enhance its quality assurance activities through development of a uniform quality improvement program to be implemented throughout the county.

Enhancement of the EMS quality improvement program was identified as one of the 1998-2003 strategic initiatives. In response to this directive, a review of the quality improvement activities and processes already in place in the EMS Division was conducted. This effort assisted in identifying areas for improvement within the EMS Division and is expected to be updated on an annual basis. In addition, the EMS Division developed a Quality Improvement Training for EMS Division employees and worked with BLS agencies to implement Quality Improvement processes in their own departments.

Strategic Initiative #12: Strategic Planning for Next EMS Levy Period

Goal: The EMS Division will update the 1998-2003 EMS Strategic Plan prior to the next levy period.

The **2002 Strategic Plan Update** to the 1998-2003 EMS Strategic Plan was conducted in anticipation of the November 2001 election. After three years of intense work and public scrutiny by two Task Forces comprised of elected officials and representatives from cities, fire districts, and the King County Council, the 2002 Strategic Plan Update outlined the operational and financial recommendations for the 2002-2007 funding period. A copy of the full report is available online at http://www.metrokc.gov/health/ems/ or by contacting the EMS Division (see Appendix G: EMS Division Contact Information).

1998-2003 EMS Strategic Plan
Strategic Initiative Status Summary Table

Strategic Initiative:	Development Stage	Pilot Project Stage	Implementation Stage
EMS Advisory Committee		N/A	Committee Initiated: 12/ 97
Regional Purchasing Program	Pilot Project Developed: 10/97	Pilot Completed: 3/ 99	Program Initiated: 4/ 99
New Vehicle Replacement Program	Project Options Reviewed: 2/99	N/A	Analysis Completed: 3/01
ALS, BLS, Regional Services, and Financial Monitoring Systems	Pilot Project Developed: 8/98	Phase I Completed: 12/01	Phase II Initiated: 1/02 Phase III Initiated: 6/02
ALS Response and Dispatch Triage Criteria	Work Plan Developed: 2/98	Phase IV Initiated: 9/00	Project Evaluation: 9/02
Transport Destination Policies	Pilot Project Developed: 4/98	Pilots Projects Completed: 7/02	Program Initiated: 7/02
Injury Prevention and Public Education	Project Review Developed	Initial Review Completed: 6/99	Targeted Projects Initiated: 03/01
Dispatch Referral Network for Appropriate Calls	Pilot Project Developed: 10/97	Pilots Completed: 3/02	Program Initiated: 6/02
BLS Run Review Program and Performance Measurements	Pilot Project Developed: 10/97	Pilot Completed: 6/ 99	Incorporated into Quality Management Program
Quality Management Program	Ongoing	Ongoing	QI Documentation Developed: 12/00
Strategic Planning for Next EMS Financial Period	Planning Developed: 2/00	N/A	Plan Completed: 3/01

C. EMS Division Programs and Activities

BLS/ EMT Training and Education Program

Helping you become the best through Training, Education and Certification!

The **Basic Life Support (BLS) Training and Education Program** provides initial training, continuing education, and recertification for 3,500 Emergency Medical Technicians (EMTs) and First Responders in King County. This requires considerable coordination and communication between the BLS Training Section staff and EMS agencies to ensure that training and education programs meet agency needs, as well as State of Washington requirements.

In addition, the section serves as the liaison between the State Department of Health and the thirty-four fire/EMS agencies in King County. In this capacity, the section provides EMS agencies all pertinent information from the State regarding continuing education, recertification, and regulatory and policy changes. The BLS Training and Education Program is directed by a Medical Services Officer from King County Medic One and is staffed by two full-time program managers and an administrative assistant.

The following **BLS Training Projects** are underway for 2002:

Initial Training Classes for EMTs: Two initial EMT training courses are offered in the spring and fall of each year. These classes are open to personnel from all thirty-four King County fire agencies. Each course consists of 120 hours of classroom and practical instruction as well as 10 hours of hospital observation time. The courses utilize the State Department of Health curriculum. In 2001, 120 EMTs completed the EMT basic course. Thus far, 60 EMTs have completed the 2002 basic course.

Competency Based Training (CBT): Each year, the State of Washington mandates EMTs to complete ten hours of continuing medical education. The topics are chosen in advance and five modules of curriculum are developed each year for a total of 15 modules in a three-year recertification cycle. In aggregate, this program is referred to as Competency Based Training (CBT). The CBT curriculum is available both in hard copy and a web-based format. The 2003 curriculum is currently being developed with selected topics including Cardiac Emergencies, Diabetic Emergencies, Trauma, Infectious Disease, and Cardiac Arrest/Resuscitation.

The CBT web format was developed for the first time in 2001 with the assistance of grant money from the Medic One Foundation. All five CBT modules for 2002 are currently available online and five of the largest fire departments have personnel enrolled. The online CBT curricula are designed for EMTs to study the material in an interactive format, and then take online cognitive

tests. The test results are automatically stored in an electronic database for ease of record keeping.

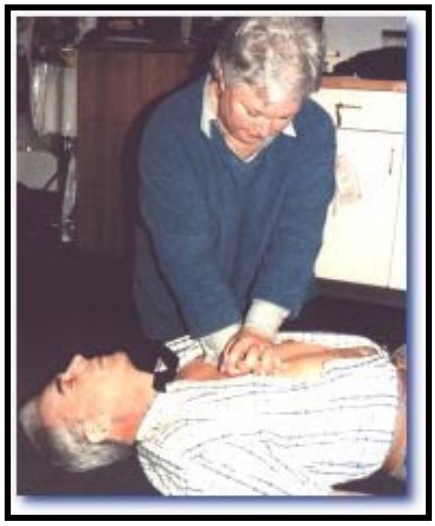
The BLS Training and Education Program sponsors twelve annual workshops to certify CBT Instructors to teach the CBT curriculum to personnel in their individual fire agencies. These workshops were held from October through December 2001 at several regional locations. More workshops will be planned for the fall of 2002.

Patient Care Guidelines: The protocols used by EMTs to direct the pre-hospital care of patients are derived from the Patient Care Guidelines. The EMS Medical Program Director (MPD) is required by Washington Administrative Code (WAC) to draft and distribute these guidelines to all EMTs and First Responders in King County. The guidelines are currently being updated by a committee of EMS providers from around the county in collaboration with the MPD. The project is scheduled for completion in October 2002.

Early Defibrillation Program: The goal of the Early Defibrillation Program is to resuscitate the greatest number of people in cardiac arrest through a comprehensive plan that includes initial defibrillation training, continuing medical education, field documentation and reporting, equipment maintenance procedures, and quality assurance activities. The Early Defibrillation Procedures Manual, including the standing orders for cardiac resuscitation, was revised this year.

Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillators (AEDs)

Community Responder CPR/AED Program: The Seattle-King County Community Responder CPR/AED program was established in 1999, and through the EMS Division, provides direction for the placement and registration of Automatic External Defibrillators (AEDs) in the community. The purpose of the program is to increase access by the general lay person/ public responder to life saving AEDs in a cardiac arrest incident. The program was designed to assist businesses, private homes, and communities in implementing the training, placement, and registration of their AEDs in compliance with Washington State law (RCW 70.54).



The EMS Division currently maintains approximately 500 registered devices in the database; a number that continues to grow. Information derived from the database on the number and location of each AED in the county is provided to 911 dispatch, allowing responding EMS agencies to be prepared upon arrival at the scene. The goal is to have all AED devices in public places and private homes registered within the EMS system. This model program has been replicated in many communities throughout the United States.

Student CPR Program: The EMS Division currently contracts with nine school districts and six fire districts to

provide CPR training to students in King County. School teachers and fire fighters, certified as CPR instructors, provided nationally recognized American Heart Association training to over 16,700 students in grades 6-12 in King County during 2001. In April 2002, five students received awards for using life saving techniques they learned in their school CPR classes.

The annual CPR Instructor Training in the Fall 2001 focused on the new CPR in the Schools Curriculum, specifically targeting students for CPR instruction. Over fifty teachers and fire fighters in the region attended the training. Each teacher and fire fighter received a tool kit from the American Heart Association as a thank you for piloting the new course. The tool kits each contained videos, booklets slides, and an instructor manual to teach the CPR course. The beauty of this new course is that all the actors and narrators used in the teaching materials are students.

CPR County Employee Training Program: The goal of this program is to give County employees the necessary CPR training to assist in a life and death event should the occasion arise. This program provides CPR training to all King County employees during their workday. Approximately 1,200 King County employees were trained in CPR in 2001, and already over 1,000 employees have been trained the first half of 2002.

Targeted CPR Training: The EMS Division works directly with several cardiologists in King County to provide CPR/ Automatic External Defibrillator (AED) training to patients that are considered high risk for heart related problems. The program offers in-home training for these individuals and their families and friends. CPR training is provided with additional AED training if a device has been assigned to the family. During 2002, this training has been conducted in 27 homes and trained 200 individuals.

Critical Incident Stress Management (CISM) Program

The Critical Incident Stress Management program within the EMS Division provides critical incident debriefing and defusing services to emergency services personnel, including police officers, firefighters, EMTs, paramedics, dispatchers and corrections officers. The program is supported by approximately 21 dedicated volunteers who donate their time as Peer Debriefers and Team Leaders. The EMS Division coordinates approximately 40 CISM related services during the year, including debriefings, defusings, one-on-one interventions, and referrals to a mental health agency.

King County Medic One

Thus far in 2002, the CISM program distributed Guidelines for Developing Peer Support Programs to local fire and police agencies. The EMS Division also co-sponsored an annual CISM Conference for the Puget Sound region along with the International

Critical Incident Stress Foundation. Three members of the CISM Team participated on the Washington State CISM Net Board of Directors. Four members of the CISM Team traveled to New York in August of 2002 to provide debriefing services for police officers in New York City.

The CISM staff worked with BLS Training and Education to provide EMTs 'Crisis Intervention and Stress Management' as a part of their CBT curriculum. A new course, 'Living Your Life in Balance: Surviving the Fire Service Career,' was developed and presented to the King County Training Officer Development Academy. A total of 60 firefighters participated in this program this year.

Emergency Medical Dispatch (EMD)

The EMS Division provides **Basic and Continuing Education Training** in Emergency Medical Dispatch (EMD) to emergency 911 dispatchers in King County. This training allows the dispatcher to appropriately triage callers so that the right level of care is sent to the patient. During the past year, 37 dispatchers from King County completed the 32-hour Basic EMD Training class. In addition, 117 dispatchers were provided 8 hours of Continuing Education in EMD related topics. An EMD Instructor Course (train-the-trainer) is scheduled for July 2002, with 16 participants registered.

Valley Communications Center

The 2002-2007 Strategic Plan Update identified a number of **enhancements to emergency medical dispatch**, focusing on enhanced dispatch training. Planning has begun in the following areas:

Basic Training: Changes to the EMD Basic curricula this year will focus on two areas. Additional training will be provided in the area of Basic Anatomy and Physiology to the dispatch students. This will be accomplished by adding one full day of training and testing prior to the existing 32-hour class. Another goal is to enhance the current 32-hour course to include more student application exercises and increase the students' participation in the learning process. This will be accomplished with role-play scenarios, simulation exercises and other incorporated activities. Both of these projects are in the early development stage.

Continuing Education Training: In an effort to meet the 8-hour per year minimum requirement for continuing education, EMD training staff designed and developed several instructional topics for the purpose of delivery to Emergency Medical Dispatchers. In Fall 2001, the training topics included Weapons of Mass Destruction and Neurological Disorders/Decreased Level of Consciousness. In Spring 2002, the topics were Respiratory Distress, Anaphylaxis, and

Environmental Emergencies. Our Fall 2002 curricula is currently in development and will highlight Trauma/ Hard Tissue Injuries.

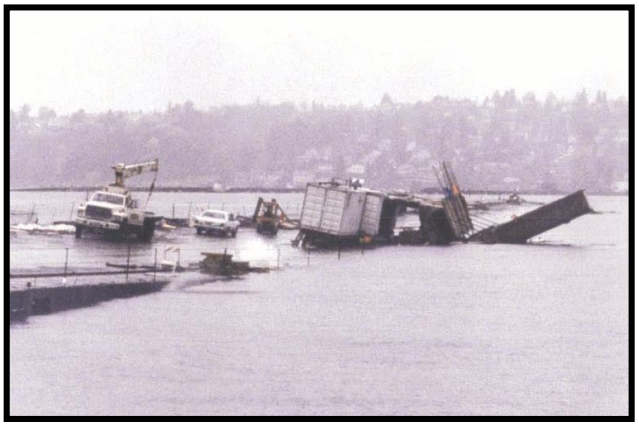
Alternate Delivery Methods for Continuing Education Training: The objective of this project is to develop and deliver the continuing education curricula in a web-based format. This will enable the dispatchers to log on from their own Communications Center consoles, and participate in the training at their convenience when the call load volumes permit. This method of delivery would be used when suited to meet the desired lesson objectives. This will be a long term project during this levy period and is still in the stages of conception and planning.

The following related article was published in the journal Circulation: Rea TD, Eisenberg MS, Culley LL, Becker L. 'Dispatcher-assisted cardiopulmonary resuscitation and survival in cardiac arrest.' *Circulation* 2001 Nov 20: 104(21): 2506-8.

Emergency Preparedness

The EMS Division manages the Emergency Preparedness program for Public Health - Seattle & King County. This includes coordination with local emergency management offices, numerous outside agencies including the American Red Cross, Harborview Medical Center, the Puget Sound Blood Center and the Washington State Hospital Association. Accomplishments for this reporting period include the following:

Public Health Employee Training: The EMS Division led the response effort to requests by Public Health - Seattle & King County for employee training in emergency preparedness. The Emergency Preparedness coordinator provided monthly introductory classes in emergency preparation to new employees and designed a new series of workshops to train large groups (150 or more trainees) at a central location in biannual workshops. A workshop in June 2002 trained over 160 Public Health employees, presenting modules in the Public Health Emergency/Disaster Operations Plan, the Incident Command System, CPR Renewal, Work and Home Preparedness, and Triage. These monthly and biannual training programs will continue in 2003. The Emergency Preparedness coordinator attended comprehensive courses in instructional delivery and alternative teaching methods conducted by the Federal Emergency Management Agency (FEMA).



Seattle Emergency Preparedness Bureau

Alternative Communications - Amateur Radio Support: The EMS Division continued to support enhancements in supplemental emergency communication for its staff by coordinating a group of amateur radio employees and instituting a set of goals, procedures (such as weekly call-ins, etc.)

for the group Public Health Amateur Radio (PHAR). EMS provided time, purchased radios, and offered administrative advice for the project. This program will continue in 2003.

Document Maintenance and Revision: The EMS Division continued to provide revisions and expansion of the Public Health Emergency/Disaster Operations Plan (The Red Book) including a mailing of 2002 updates in February 2002, and quarterly updates of the key staff wallet card and emergency contact list. These updates will continue in 2003 with a major revision of the Public Health Emergency /Disaster Operations Plan in October 2002. The material of the manual will be published online in the 'Public Folders' of Public Health. This effort will begin in 2002 and continue into 2003.

Emergency Management Realignment and Enhancement: In light of increased demands for emergency planning and response by Public Health as a result of terrorist activity and the threat of bio-terrorism, the EMS and Prevention Divisions recommended a plan for realignment, developing a new Emergency Management Unit to be housed under the Office of the Director. Additional staff will be provided by shifting existing resources and incorporating the new bio-terrorism grant funding. The new Emergency Management Unit is expected to be operational by September 2002.

Increased Readiness by Public Health: In 2002, Public Health increased its operational readiness to ensure availability of department staff to outside agencies 24-hours a day, seven days a week. This was accomplished by strengthening the Public Health Duty Officer program, equipping Duty Officers with new technology for communications, and implementing a Duty Officer training program.

Medical Control

The **Medical Program Director (MPD)** is responsible under the Washington Administrative Code (WAC) and Revised Code of Washington (RCW) for medical control and direction of certified EMS personnel in King County. This is accomplished through the delegation of medical oversight to the medical directors of individual paramedic program and emergency room-based on-line medical control to ALS personnel, by assisting in the development of policies and procedures related to the provision of ALS and BLS services, and by providing written treatment guidelines for BLS personnel. The Medical Directors' Committee, comprised of the medical directors from each ALS provider agency, provides generalized program oversight. The committee meets on a quarterly basis to address pertinent medical issues.

Topics of recent interest to the Medical Program Directors include:

- **Evaluation of the policy to provide ALS services in rural areas using EMT-P units:** EMT-P units have historically allowed for improvements in paramedic service response times to areas with low call volumes but growing needs. It was anticipated that call volumes would grow with time and the units would eventually be staffed with two full time paramedics. This growth did not occur and instead EMT-P units often provide ALS care to severely ill or

injured patients with a single paramedic far from their backup units. The Medical Directors have unanimously recommended that the two EMT-P units in King County be discontinued and replaced with the two-paramedic staffing model.

- **Paramedic Training Improvements:** In cooperation with the Paramedic Training program at Harborview Medical Center, an increased number of airway management laboratories, Advanced Cardiac Life Support (ACLS), and Pediatric Advanced Life Support (PALS) training opportunities have been developed. This should not only provide more advanced training to paramedics, but make it easier for them to fulfill their recertification requirements.

- **EMT Defibrillation Protocols:** The procedures for EMT defibrillation have recently been updated. These standards have been in place since the pioneering efforts of Dr. Richard Cummins showed the utility of early defibrillation by EMTs in a special research protocol. These skills are now part of the routine scope of EMT practice in Washington State. The new procedures reflect this change and now integrate defibrillation protocols more closely with the current EMT training curriculum.

Administrative Functions

The EMS Division operates under the guidelines presented in the various Master Plans, Master Plan Updates, and Strategic Plans, all approved by the King County Council. The process for updating these directives and implementing the specific programs identified in the plans requires significant data analysis and program coordination. An integral component of this analysis is the data modeling used to identify optimal placement of paramedic units. A few of the major activities this year included the provision of ongoing data analysis to those responsible for updating the 1998-2003 EMS Strategic Plan and development, implementation and ongoing management of current strategic initiatives.

The EMS Division is responsible for the coordination of services with other divisions of Public Health - Seattle & King County and other county agencies, councils, and offices, such as the Prosecuting Attorney, King County Executive, Risk Management, and the King County Council. Responsibilities also include the coordination and delivery of strategic planning, union negotiations, personnel and payroll issues, diversity management, legal compliance liability issues, contract administration, and the issuance and compliance of policies and procedures. The EMS Division maintains contracts for five paramedic provider groups of Advanced Life Support Services (ALS) and for thirty-three Basic Life Support Provider (BLS) agencies located in King County and maintains fiscal responsibilities for the EMS Division, including budget preparation and monitoring, projection of long term financial planning, and management of levy funds.

The EMS Division is also responsible for management of the Medical Incident Report Form (MIRF) data gathered in the field in compliance with Washington Administrative Code (WAC) 246-976-420. Duties related to the oversight of this dataset include management of the cardiac database and the entire data warehouse system, collection and processing of approximately 115,000 Medical Incident Report forms per year, and regular review of the EMS data set and data

system. The EMS Division provides rapid response to data requests from external agencies and EMS agencies in King County; provides data analysis and reports for pilot projects, EMS programs, and research projects; and provides network connectivity and management for all EMS Division employees.

D. Grant Funded Programs and Projects

Center for The Evaluation of Emergency Medical Services (CEEMS)

The Center for the Evaluation of Emergency Medical Services is a grant-supported research team that works with investigators from the University of Washington and employees from the EMS Division, Public Health - Seattle & King County. The research focuses on the field of pre-hospital emergency care with the goal to maintain national and international leadership by conducting cutting edge research and publishing in the field of cardiac arrest. The following summary highlights two of the many CEEMS programs and activities.

Heart Attack Survival Kit (HASK) Program: HASK is a National Institute of Health (NIH) funded project in its third year of support with the goal to increase appropriate action to a heart emergency among persons sixty-five years of age and older. The primary objectives are to increase calls to 911 among seniors experiencing chest pain and increase self-administration of aspirin.

The Heart Attack Survival Kit lists the symptoms of heart attack, tells them to call 911 and to take an aspirin. A single aspirin is individually packaged and glued onto the kit itself for use if they should experience chest pain symptoms. To date, 27,000 Heart Attack Survival Kits have been delivered by fire department EMTs to seniors residing in King County. Approximately half of the seniors were home and had a brief (3-5 minute) visit with the EMTs. The goals were to discuss barriers that the seniors might have in calling 911 for chest pain and to educate them in taking an aspirin once they have called 911. The half that was not at home at the time of the visit received their kit in a plastic bag on their doorknob.

Presently, a telephone survey is being conducted with seniors in both the intervention and control communities asking them questions about their knowledge of symptoms of a heart attack, intentions should they have symptoms, knowledge of the Heart Attack Survival Kit, its content, and if they still have it in their home.

For the past six months, and through December of 2003, chest pain calls to 911 will be matched with addresses of those seniors who received kits by a fire fighter EMT, left at the doorstep, or who fell into our control group. The incidents will be reviewed to determine if they took aspirin prior to the fire department arrival. The frequency of 911 calls will be reviewed in these areas before and after the kit deliveries to monitor the impact of the program.

Family Heart Savers Project: The Family Heart Savers Project was designed to study the potential benefit of home defibrillation performed by laypersons. Funding is through in-house grants from private defibrillator manufacturers. Defibrillators were also donated. Specific goals are to 1) determine the psychological consequences of receiving training in and possessing a home automatic external defibrillator (AED) for high-risk patients and their family members, 2) determine initial performance and retention following the AED training, and 3) determine circumstances around actual events.

Phase One recently ended with 100 families enrolled in the program. They were randomly assigned to either CPR training, or CPR training plus AED training and the receipt of a no-cost automatic external defibrillator. Phase Two will enroll an additional 300 families and all will receive an AED and be randomly assigned to three different types of AED training. All Phase One and Two patients and families will receive psychological questionnaires at timed intervals to determine the psychological impact of the program.

Defibrillation Interest Group: The Defibrillation Interest Group (DIG) is most affectionately known as 'Diggers' by those attending the weekly Friday noontime brown bag lunch meetings. Chaired by Dr. Mickey Eisenberg, Director of the Center for the Evaluation of Emergency Medical Services (CEEMS), the meetings are designed to explore research opportunities in the field of automatic external defibrillation (AEDs). The multi-talented group is comprised of a variety of members, including representatives of EMS programs, medical students and residents, visiting experts, and invited speakers gathered to discuss current research issues in the field of AEDs. The students contribute greatly by completing feasibility studies or providing pilot study data for future grant applications. Many of these studies are published in recognized scientific or EMS related journals for the benefit of both student and the EMS Division.

The following related papers were published in Heart & Lung: the Journal of Acute and Critical Care: 1) Meischke HW, Rea TD, Eisenberg MS, Rowe SM: Intentions to use an automated external defibrillator during a cardiac emergency among a group of seniors trained in its operation. *Heart Lung* Jan-Feb 2002; (1): 25-9; and 2) Chen MA, Eisenberg MS, Meischke H: Impact of in-home defibrillators on post myocardial infarction in patients and their significant others: An interview study. *Heart Lung* May/June 2002; 31(3) 173-185.

Central Region Emergency Medical Service and Trauma Care Council

Traumatic injury is the leading cause of death for all people under the age of 44, and the leading cause of disability for all people under age 65.

The Central Region EMS and Trauma Care Council was established by The Statewide Emergency Medical Services and Trauma Care System Act of 1990 (RCW 70.168). The Trauma Council and its committees provide a forum where public and private EMS providers can meet and discuss the issues they all face – how to provide the best possible care to the millions of people who live, work, and play in King County.

Airlift Northwest

The Central Region EMS and Trauma Care Council is grant funded by the State Department of Health. These funds are administered by the EMS Division. The current grant contract expires in June 2003. Required activities for this funding period include: facilitation of hospital needs assessments and development of hospital disaster plans, data collection and analysis, quality assurance reviews, and injury prevention and education. Until funding runs out, the Central Region EMS and Trauma Care Council will continue to plan and drill for disasters, man made or natural; as well as discuss prevention and treatment of day-to-day traumatic injury.

Disaster preparedness and emergency room closures have been pressing issues for the Trauma Council during the past few years. Following the September 11th terrorist attack, preparation for high-casualty incidents has intensified. Hospital supplies, bed capacity, staffing shortages, isolation rooms, laboratory capabilities, and training are priority items of discussion at all meetings. Listed below are highlights of past year's efforts.

Puget Sound Hospital Capacity Website: The Puget Sound Hospital Capacity Website was developed by Harborview Medical Center and the University of Washington. The website is now in its third year of operation. The main function of the website is to communicate hospital bed capacities, emergency room status, and other information to the EMS community. For example: if a Seattle hospital has closed its emergency room to medic units, staff at that hospital will post on the website that they are closed to Medic One. Staff at other Seattle hospitals will see the closure information on the website and prepare to take additional patients. Medic unit drivers with patients onboard heading to the closed hospital will be notified en route to take their patient to a hospital that is open to Medic One. This information saves time and time is critical to a seriously injured or ill patient.

This year a hospital response stage protocol was developed and added to the website. The hospital response stage protocol is a five-step, color-coded process that alerts emergency medical staff to events that may effect their operations and tells them what actions they can take to prepare. For example: when the green message box "Stage 0" appears on the website homepage, emergency medical staff sees that nothing unusual is happening in the EMS community – so its business as usual. When the red message box "Stage 3" appears on the homepage, emergency medical staff sees that something substantial has happened, like a plane crash at SeaTac, so they need to prepare for incoming injured and activate their disaster plans. The website is now available statewide.

Washington Emergency Medical Radio System: Harborview Medical Center is continuing development of the Washington Emergency Medical Radio System (WEMRS). WEMRS uses a radio frequency dedicated for use only by emergency medical services. WEMRS will extend radio service statewide to support seamless communication between EMS providers in the field,

hospitals, and aero-medical transport. Hospital communications will be encrypted for security. Harborview Medical Center provided the initial trial that has linked the Puget Sound region with Yakima and Bellingham. The State Department of Health has decided to fund WEMRS through a federal grant.

Basic Emergency Nursing Course: The Washington Emergency Nursing Education Council (WENEC) and Overlake Hospital Medical Center have developed the Basic Emergency Nursing Course. This program is an important step in helping nursing school graduates prepare for the rigors of the emergency room. The Basic Emergency Nursing Course replaces a similar program no longer offered by Bellevue Community College. Classroom instruction of the course will begin in Spring 2002. WENEC plans to offer the Basic Nursing Course statewide via telemedicine in Winter 2003.

Multiple Casualty Incident (MCI) Curriculum: King County Medic One headed development of a multiple casualty incident curriculum. The curriculum covers staging, triage, and treatment protocols for incidents of any scale, from the almost daily occurring vehicle collision involving 6-8 patients to the rare disaster where the number of patients exceeds 100. The multiple casualty incident curriculum has been accepted by the King County Fire Chiefs and will be made available to Fire Departments in 2002.